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Analyzing Parent Trust as A Predictor of Parental Involvement with ADHD as Moderator

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NORTHERN ILLINOIS UNIVERSITY

Analyzing Parent Trust as A Predictor of Parental Involvement with ADHD
as Moderator

A Capstone Submitted to the

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By

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ABSTRACT

The current study examined the relationship between parent trust and parent involvement. Higher levels of parent involvement have been shown to have positive effects on child behavior and achievement, and past studies have found significant positive correlations between levels of trust and involvement. ADHD was examined as a possible moderator of the association between trust and involvement. Extant data from a larger study involving parents of students in kindergarten was examined. Regression was used to examine the association between parent trust and parent involvement behaviors. ADHD was included in the regression models as a moderator. Results indicated that some forms of involvement may be predicted by trust, where only one type of involvement was predicted significantly. Inattentive symptoms did moderate this interaction between trust and home-school communication. Findings contribute to understanding the association between trust and various forms of parent involvement and how that interaction may be affected by child behaviors.

INTRODUCTION

Parent Involvement

Parent involvement (PI) is a concept that has evolved over time. Once only relating to specific roles or activities done by parents, the definition used by most studies now considers a much wider range of beliefs, behaviors, or relationships parents can participate in to benefit their child's educational outcomes (Fishel & Ramirez, 2005). Research on PI has often focused on three specific types of parent involvement (Fantuzzo et. al, 2004). The specific types are home-based involvement, school-based involvement, and home-school conferencing. Home-based involvement (HBI) is the way parents establish a good learning environment in the home, which are activities such as scheduling time for and participating in learning activities, or providing supplemental learning materials (Fantuzzo et al., 2000). Some examples for establishing a good learning environment would be helping their child with homework or rewarding good academic performance. School-based involvement (SBI) can be defined as behaviors that parents engage in at the school for the benefit of their children (Fantuzzo et al., 2004). Some examples of this type of involvement are activities like fundraising, volunteering in the classroom, or chaperoning field trips. Finally, home-school conferencing (HSC) is a description of behaviors that involve the communication between teachers and parents pertaining to the child's academic progress (Fantuzzo et al., 2004). Attending parent teacher-conferences is an example of this type of involvement.

PI has been shown to have a positive correlation with positive child adjustment (which includes academic achievement, emotional adjustment, academic engagement), with aspects of HBI having a stronger association with outcomes than aspects of SBI (Barger et al., 2019). HBI

is typically the most strongly associated with child achievement of the different involvement types; however, parents that participate actively with all three types of PI typically see higher levels of achievement than parents who only participate in an individual type of PI (Cotton & Wikelund, 1989).

Prior research has found that a majority of the time, PI has not been significantly associated with gender (Ogg & Anthony, 2019). However, some research suggests forms of PI could vary between genders. One study found that boys may receive less SBI but more HBI than girls (Carter & Wojtkiewicz, 2000). Studies have also found that children may benefit from different forms of PI depending on their gender (Baker & Soden, 1997). Given the mixed findings for gender, the current study incorporated gender in all analyses.

Trust

Because parents have limited involvement in the actual classroom, it is the teacher's responsibility to support the needs of the child during the school day. Parents must have a level of trust in the school to do this. Trust in the family–school relationship is the belief the other entity will act in a way to benefit and sustain the relationship to achieve positive outcomes for students (Adams & Christenson, 1998). When parent trust is low, it has been found that this can lead to poor academic performance, especially when combined with low social-economic status (Forsyth et al., 2005). On the other hand, higher levels of parent trust in the teachers was correlated with increased child prosocial behavior, decreased total difficulties, decreased issues between peers, and decreased levels of emotional problems (Santiago et al., 2016).

Since higher levels of PI have been shown to yield beneficial outcomes for children, finding ways to increase PI is important to generating more positive results in the classroom.

When examining differences in parent and teacher trust levels, Adams & Christenson (1998) found that higher levels of parent trust correlated with high levels of PI, while also finding that lower levels of PI correlated with the low to moderate trust levels. When investigating outcomes of PI, prior researchers have discovered that low levels of parent trust can be a reason for low parent involvement, because if they feel uncomfortable or have a hard time connecting with the school or teachers it is more difficult to find areas to become involved (Peña, 2000). In prior research trust between the parent and teacher has not been significantly predicted by child gender (Adams & Christenson, 2000).

ADHD

Characteristics of the child have also been shown to relate to parent involvement in education. For example, researchers have considered how symptoms of Attention-Deficit/Hyperactivity Disorder (ADHD) can relate to parent involvement (Ogg et al., 2022). The essential feature of ADHD is a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development (DSM-5; American Psychological Association, 2013). There are three subtypes of ADHD, which are the hyperactivity/impulsivity, inattention, and combined subtypes. Inattention involves symptoms like difficulty focusing on tasks or avoidance of tasks that require large amounts of concentration. Hyperactivity involves symptoms like not being able to stay seated or excessive fidgeting. Impulsive symptoms include making fast decisions without considering consequences or a desire for immediate reward. A recent study using data from electronic diaries with parents of children aged 6-12 years old showing symptoms of ADHD analyzed how subtypes of ADHD can affect involvement. The result

indicated that inattentive symptoms showed a more strong, negative association with HBI than hyperactivity/impulsivity (Ogg et al., 2022).

There are notable gender differences in ADHD. ADHD has been historically more frequent in males than in females, and currently holds a ratio of approximately 2:1 in children, which then moves to 1.6:1 in adults (DSM-5; American Psychological Association, 2013). Females with ADHD typically experience more learning difficulty and internalizing symptoms, while males typically act out and show more behavioral issues; however, both sexes still experience greater impairment compared to neurotypical people (Bálint 2008).

Prior research has shown that for youth with ADHD, teachers can approach parents (especially mothers) in a way that makes them feel blamed for their child's behavior in the classroom, but parents also blame the school as they feel the symptoms or behavior were not problems until their child started attending class (Gwernan-Jones et al., 2015). Blame causes trust to be affected in a negative way as blaming or feeling blamed by one party is not a supportive behavior like the definition of trust includes. ADHD can also cause difficulties between a parent and child's relationship. (Rogers et al., 2009).

In addition, recent studies have examined how ADHD can be associated with involvement over time. One study, analyzing longitudinal data from the Fragile Families and Child Wellbeing Study (FFCWS), found that perceived ADHD symptoms earlier in a child's life is a risk for receiving lower levels of HBI and SBI as early as elementary school (Shelleby & Ogg, 2019). However, when higher levels of PI are present, PI has been shown to be one of the strongest predictors of positive social outcomes for children with ADHD, even when accounting for risk factors like youth depression and conduct disorder (Ray et al., 2017).

Current Study

There is limited research examining the relationships between parent involvement, parent-teacher trust, and ADHD symptoms. Past studies have demonstrated that higher levels of trust and involvement are shown to have positive effects on child achievement (Barger et al., 2019; Santiago et al., 2016) and that trust and involvement correlate positively (Adams & Christenson, 1998; Peña, 2000). Understanding variables that can potentially impact the relationship are important to take into consideration. The current study examined how a parent's level of trust in the schools predicts their level of involvement, and whether the parent's perception of child ADHD symptoms moderates the relationship. Because past research has identified ADHD as a factor that can negatively affect both variables individually, (Gwernan-Jones et al., 2015; Rogers et al., 2009), it is important to analyze how it can affect the relationship as well. Significant findings in this study would not only be important for consistency with past literature about trust and PI, but also finding a reason to continue searching an area that has not been explored in depth. The specific research questions and hypotheses are outlined below.

Q1. To what extent does parent trust of the teacher predict parent involvement in education?

Based on previous research analyzing the relationship between PI and trust (Adams & Christenson, 1998; Peña, 2000), it is hypothesized that higher level of trust between parents and teachers will be positively associated with PI across each type of parent involvement (i.e., HBI, SBI, HSC). It is expected that the correlation will be strongest with HBI (Barger et al., 2019), followed by SBI, then HSC.

Q2. Do child ADHD symptoms moderate the association between trust and parent involvement?

Because of the evidence of strained relationships between children, parents, and teachers when ADHD is present (Gwernan-Jones et al., 2015; Rogers et al., 2009), there is reason to believe that child ADHD symptoms may influence the relationship between trust and PI. It is hypothesized that higher levels of ADHD symptoms, the stronger the correlation between trust and PI. This is based on prior research that ADHD symptoms are correlated with lower levels of trust and involvement (Rogers et al., 2009). This would then strengthen the positive correlation between trust and PI because trust will be particularly important in predicting parents' involvement behaviors when child ADHD symptoms are higher.

METHOD

Participants

The data that was used in the current study comes from an extant study. The extant study was a longitudinal study involving parents of children that are enrolled in kindergarten in an Eastern Canadian city. In this Canadian province, there are two levels of kindergarten. These levels are junior kindergarten (4-year-old students) and senior kindergarten (5-year-old students). Both are held in the same classroom and taught by the same teachers. This style of kindergarten is a full day program, taught in 50% English and 50% French.

In the study, 42.2% of the students were female, 35.1% were male, and 22.7% parents did not provide an answer to this question. 61.1% of the children were white, 6.6% were Arab, 6.6% were black, 4.3% were South Asian, 11.4% others, and 7.1% of parents chose not to answer. The average income was between \$106,000 and \$118,999. The exclusionary criteria for

the study were that students had to be proficient in English and could not have a previous diagnosis of Autism Spectrum Disorder (ASD) or an intellectual disability.

Procedures

After approval by the university and school IRB, every kindergarten student at the six schools that were participating was sent home with the research consent package. Parents agreed not only to participate themselves, but also allow for teachers to complete surveys about their children and permission for their child to be tested in the school. Out of the 750 consent forms that were sent out, 211 came back (28%). In the extant study, data were collected at six time points from 2019 to 2022. The data being used in this study will only come from the parent's survey answers from the Fall 2019 semester, which was taken in December 2019 and January 2020, after the semester had concluded. Parents completed their surveys online. No teacher data were collected during the fall of 2019 due to a teacher strike.

FIQ

To measure parent involvement, the Family Involvement Questionnaire (FIQ) was used. The FIQ (Fantuzzo et al, 2000) is a multi-dimensional scale that has 42 items to assess a parent's own belief about their involvement. The scale uses a 4-point Likert format for responses (1 = rarely to, 4 = always). There are 3 subscales in this measure, for the levels of involvement mentioned earlier; HBI (13 items), SBI (12 items), and HSC (11 items). Reliability has been shown to be acceptable, with Cronbach's alpha scores above $\alpha = .70$ for each subscale ($\alpha = .85$ for HBI and SBI, $\alpha = .81$ for HSC) when developing the scale (Fantuzzo et. al, 2000).

Family-School Relationship Survey

The Family-School Relationship Survey (Adams & Christenson, 1998) was used to assess trust in this study. This survey has been tested on both parents and teachers, but we will

only be looking at parent responses when reviewing the data. Parents answered the 20 item questionnaire about how confident they are in the teachers behaving in a way to benefit their child's education, and the parent-teacher relationship. The responses are given as a 4-point likert scale (0 = Strongly Disagree to 3 = Strongly Agree). The scale has demonstrated strong internal reliability ($\alpha = .94$) when used for the parents (Adams & Christenson 2000).

Child Symptoms of ADHD

The ADHD Rating Scale–5 for Children and Adolescents, Home Version (ADHD RS-5; DuPaul et al., 2016) was used to gather information on parent's perception of ADHD. The ADHD RS-5 was developed using diagnostic and symptom criteria from the DSM-5, and has 18 items in total. There are two subscales based on two of the subtypes of ADHD, where nine items are for hyperactivity/impulsivity and the other nine are for inattentiveness. A parent indicates the frequency of these behaviors on a 4-point Likert scale (0 = never/rarely to 3 = very often). The subscale for inattention ($\alpha = .95$) has been found to have a higher internal reliability than the hyperactivity/impulsivity subscale ($\alpha = .83$), but both are still high (DuPaul et al., 2016). Both subscales will be tested when examining for moderation effects.

Analyses

H1. To what extent does parent trust of the teacher predict parent involvement in education?

To analyze research question 1, a regression was used with parent trust as the independent variable and PI as the dependent variable. Because the FIQ has three subscales for each level of PI, three models were run (one for each form of PI to examine how trust predicts each individually). The covariate of gender was included because of the gender differences in ADHD symptoms and PI.

H2.Do child ADHD symptoms moderate the association between trust and parent involvement?

To examine moderation, the interaction term of ADHD symptoms and trust will be added to the models above for each form of parent PI outcomes. Because subtypes of ADHD have been shown to affect PI differently (Ogg et al., 2022), both subscales of the ADHD RS-5 were examined individually to assess for moderation.

RESULTS

Preliminary Analysis

The measures used in this part of the study all demonstrated good internal reliability in the current sample with Cronbach alphas above .70 (see Table 1). Parents rated themselves highly for trust on average, where $M = 2.450$ on the likert scale from 0-3. For PI, parents rated themselves high in HBI, where $M = 3.012$ on the likert scale ranging from 1-4, but lower for both SBI ($M = 1.768$) and HSC (1.907).

The responses from the ADHD RS-5 indicate that parents are perceiving low levels of ADHD symptoms on average. On the scale from 0-3, each subscale presented low averages, with $M = 0.589$ for inattention and $M = 0.691$ for hyperactivity/impulsivity. However, 33 of the children that participated in this study (18 male, 15 female) scored at or above the 80th percentile on the ADHD RS-5, indicating they may meet the diagnostic criteria for ADHD based on parent report.

Table 1: Trust, Involvement, and ADHD Symptoms

<i>Measure</i>	<i>M</i>	<i>SD</i>	<i>a</i>
<i>Trust</i>	2.450	.484	.965

<i>HBI</i>	3.012	.495	.829
<i>SBI</i>	1.768	.443	.754
<i>HSC</i>	1.907	.573	.871
<i>ADHD RS-5 Hyperactivity - Impulsivity Subscale</i>	0.691	.606	.876
<i>ADHD RS-5 Inattention Subscale</i>	0.589	.549	.910

As shown in Table 2, the correlations were mostly in the expected direction. Trust was positively associated with HBI ($r = .131$), SBI ($r = .261$), and HSC ($r = .029$). Inattention ADHD symptoms were negatively associated with Trust ($r = -.279$), and with HBI ($r = -.083$), SBI ($r = -.076$), and HSC ($r = .187$). The positive correlations for inattention symptoms with SBI and HSC were not in the expected directions. Hyperactivity/Impulsivity ADHD symptoms were associated with Trust ($r = -.278$), and with HBI ($r = -.108$) and SBI ($r = -.122$). ADHD hyperactivity/impulsivity symptoms were positively associated with HSC ($r = .146$).

Table 2: Correlation Matrix

	<i>Trust</i>	<i>HBI</i>	<i>SBI</i>	<i>HSC</i>	<i>H/I</i>	<i>Inattention</i>	<i>Gender</i>
<i>Trust</i>	–						
<i>HBI</i>	.131	–					
<i>SBI</i>	.261*	.557*	–				
<i>HSC</i>	.029	.490*	.558*	–			
<i>ADHD RS-5 Hyperactivity /Impulsivity Subscale</i>	-.278*	-.108	-.122	.146	–		
<i>ADHD RS-5 Inattention Subscale</i>	-.279*	-.083	-.076	.187*	.701*	–	

Gender	-.035	.221*	.193*	.022	-.073	-.129	-
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Note: * indicates $p < .05$

Primary Analyses

The first research question examined the degree to which trust predicts parent involvement. The analysis used the extant data from 106 parents who completed all 3 measures of the study (the FIQ, Family-School Relationship Survey, and the ADHD RS-5) in Fall of 2019. As can be seen in Tables 3 and 4, there was only one form of PI that was significantly predicted by trust. This was SBI, where in both regression analyses the effect is positive and significant ($b = .211, p = .023$ for hyperactivity/impulsivity model; $b = .226, p = .013$ for inattention model). Trust was not a significant predictor for any other forms of PI, but the regressions were positive, which was the expected direction.

The second research question examined the potential for ADHD symptoms to moderate the correlation between trust and PI. In Table 3, the results for the Hyperactivity/Impulsivity scale are shown. In these analyses, there is no significant moderation effect on trust and PI by ADHD for any of the PI outcomes. However, the interaction terms for both SBI and HSC are negative, indicating the presence of symptoms may weaken the relationship between trust and PI, which goes against the hypothesis presented earlier.

Table 3: Regression Models for Hyperactivity/Impulsivity

<i>Parent Involvement</i>		<i>Home-Based Involvement Model</i>		<i>School-based Involvement Model</i>		<i>Home-School Communication Model</i>	
<i>Beta (SE)</i>	<i>p</i>	<i>Beta (SE)</i>	<i>p</i>	<i>Beta (SE)</i>	<i>p</i>	<i>Beta (SE)</i>	<i>p</i>

<i>Trust</i>	.156 (.106)	.151	.211 (.091)	.023	.094 (.128)	.5
<i>Child ADHD</i>	-.077 (.093)	.406	-.046 (.079)	.559	.074 (.110)	.50
<i>Hyperactivity</i>						
<i>Symptoms</i>						
<i>Interaction:</i>	.110 (.179)	.542	-.086 (.152)	.571	-.176 (.213)	.41
<i>Hyperactivity</i>						
<i>Symptoms x Trust</i>						
<i>Gender</i>	.233 (.097)	.018	.151 (.083)	.071	-.009 (.116)	.96

Table 4 shows the results of the analyses for the Inattention Subtype. Similar to hyperactivity-impulsivity, the interaction terms for SBI and HSC were again negative. However, in this analysis, the moderation was significant for HSC ($b = -.616, p = .027$).

Table 4: Regression Models for Inattention and PI

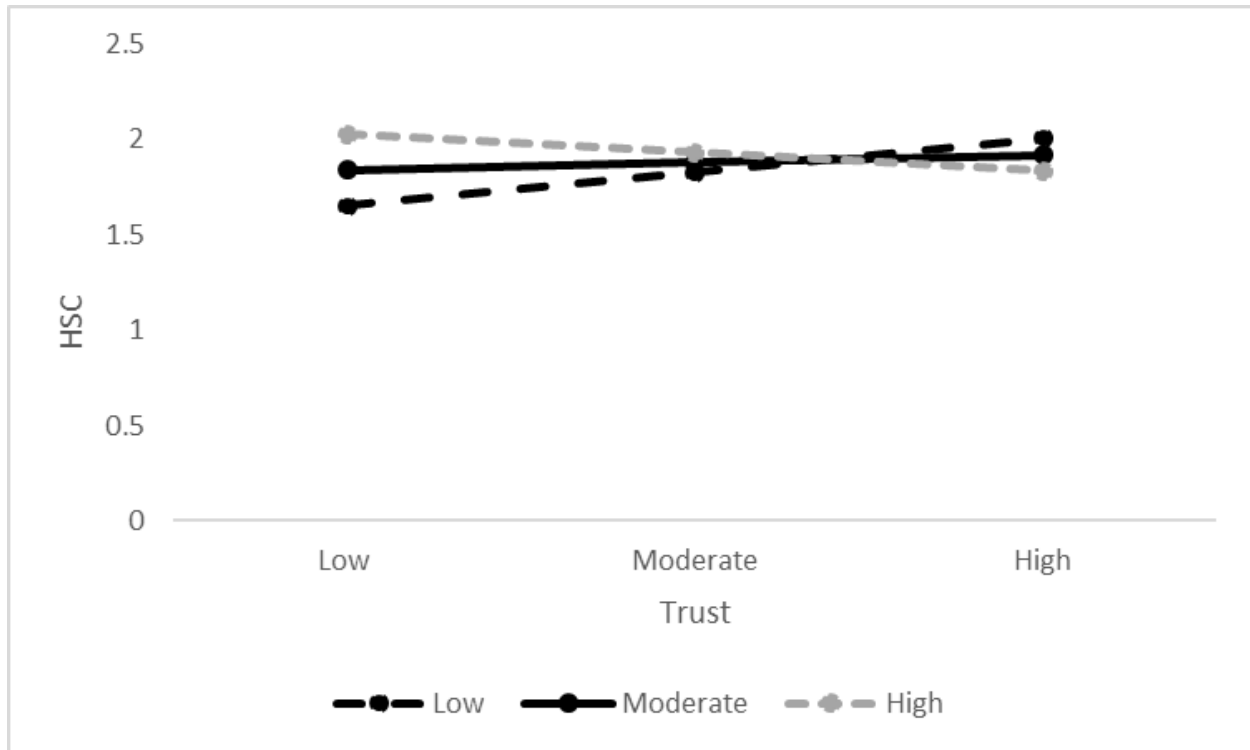
<i>Parent Involvement</i>	<i>Home-Based Involvement Model</i>		<i>School-based Involvement Model</i>		<i>Home-School Communication Model</i>	
	<i>Beta (SE)</i>	<i>p</i>	<i>Beta (SE)</i>	<i>p</i>	<i>Beta (SE)</i>	<i>p</i>
<i>Trust</i>	.183 (.106)	.085	.226 (.134)	.013	.081 (.182)	.504

Child ADHD	<i>-.064 (.098)</i>	<i>.512</i>	<i>.027 (.083)</i>	<i>.742</i>	<i>.109 (.113)</i>	<i>.331</i>
Inattention						
Symptoms						
Interaction:	<i>.107 (.239)</i>	<i>.654</i>	<i>-.051 (.202)</i>	<i>.802</i>	<i>-.616 (.275)</i>	<i>.027</i>
Inattention						
Symptoms x						
Trust						
Gender	<i>.228 (.098)</i>	<i>.022</i>	<i>.157 (.083)</i>	<i>.061</i>	<i>-.018 (.112)</i>	<i>.871</i>

Significant moderation was graphed in Excel using the data generated from the Process macro for low (16th percentile), moderate (50th percentile), and high (84th percentile) values of the moderator. The plot of the interaction (Figure 1) indicates that parent trust was significantly associated with HSC for parents who reported lower levels of inattention symptoms in their children. Specifically, parent trust was significantly related to higher HSC with low ADHD inattention symptoms ($b = -.478, t = 2.141, p = .035, 95\% \text{ CI} = .023 - .724$); however, at the average ($b = -.034, t = .844, p = .401, 95\% \text{ CI} = -.138 - .342$) and high levels of inattention symptoms ($b = .411, t = -1.016, p = .312, 95\% \text{ CI} = -.506 - .163$), this association was not significant. At high levels of ADHD symptoms, the association between trust and HSC changes direction, where there are lower levels of trust and higher levels of HSC.

Figure 1

Moderation Effect on HSC



DISCUSSION

The current study examined the relationship between parent trust and PI, as well as the potential moderating role of ADHD symptoms have on the relationship between trust and PI. Only one form of parent involvement was significantly predicted by parent trust. While it was hypothesized that HBI would have the strongest correlation with trust because of past literature (Barger et al., 2019), the strongest and only significant correlation of PI was found with SBI. This is logical because of the behaviors involved with SBI, which are chaperoning, volunteer work, or attending school events. Parents attending these events most likely have higher levels of trust in the school, which could explain why that was the only significantly predicted PI in this study. While trust was not shown to be a significant predictor for HBI and HSC, the correlations and regressions were both positive, which does align with past findings (Adams & Christenson, 1998; Peña, 2000) concerning trust and involvement.

Although ADHD hyperactivity-impulsivity symptoms were not a significant predictor of involvement, the correlations showed interesting patterns. While HBI and SBI were both negatively associated with ADHD hyperactivity symptoms, HSC actually showed a slight positive association with hyperactivity symptoms. While these findings concerning HBI and SBI do align with previous research (Shelleby & Ogg, 2019), the positive relationship with HSC does come as a surprise. Possible explanations for this are that parents that notice more ADHD symptoms communicate more with teachers about their child in the classroom, or that teachers are reaching out more frequently to parents regarding their child's performance in class.

Hyperactivity/Impulsivity ADHD symptoms did not moderate the relationship between PI and trust. While it was expected that ADHD symptoms would strengthen the correlation between trust and PI (Rogers et al., 2009), that was only true for HBI. For SBI and HSC, ADHD symptoms slightly weakened the relationship. While none of these interactions were significant, the results where ADHD weaken the relationship go against what was hypothesized.

The analysis for inattention yielded similar findings, however the negative interaction term for trust and HSC was significant in this model. Building on the idea that HSC and ADHD symptoms were positively related because these symptoms increase the amount of times parents may interact with teachers, the relationship then weakens because parents may become less trusting in their ability to successfully teach their child at school displaying these symptoms. Because the subscales did show differing results for each type of PI, this does align with previous findings that different symptoms have differing effects on PI. (Ogg et al., 2022).

Limitations

One overall limitation of this study was the sample. Along with being a small sample, there were low amounts of diversity and the average income from the sample was considerably

above the average salary for Canada. Because of known differences of PI between race and SES (Cotton & Wiklund, 1989), investigating a more diverse sample would most likely yield more generalizable results. This sample also had a low amount of reported ADHD symptoms. A sample consisting of children diagnosed with ADHD or children that are showing more symptoms may have a more significant effect on trust and involvement.

Another limitation with this data is that it only followed one group of children from one semester in school. Because this sample is from a kindergarten class, this may be a parent's first semester ever dealing with the school, which would inherently affect their levels of trust compared to parents who have had more experience with a school. Also, because some of these children are going to school for the first time, parents may not understand ways to be involved or notice symptoms of ADHD right away. There was also no measure for whether or not children had siblings that attended the school before them, which could affect the parent's behaviors if they have prior interactions with the school. A better way to collect this data would be to test across multiple grade levels, or by using the original plan for the larger study this data came from, which was to explore how these values change over time as students and their parents progress through school.

Implications

Findings from this study contribute to research on PI, parent trust, and ADHD symptoms by finding areas where past literature may have overlooked. In the case of trust predicting involvement, these findings align with past research where they are positively correlated (Adams & Christenson, 1998; Peña 2000), however the correlations are weak and non-significant. While a study with a broader sample of youth may find results more consistent with current literature, it is important to investigate whether this is true for all grade levels or cultures. While prior

research has found that the presence of ADHD symptoms could lead to less HBI and SBI (Shelleby & Ogg, 2019), our findings suggest that may not be true in all circumstances. These findings align with more recent research suggesting there could be a difference across the subtypes of the disorder (Ogg et al, 2022) for what type of involvement is affected the greatest by the presence of ADHD symptoms.

Inattentive symptoms significantly weakened the relationship between trust and HSC. Where in the past, ADHD symptoms typically affected both trust and PI negatively (Gwernan-Jones et al., 2015; Rogers et al., 2009), the negative interaction results and the mixed association results mentioned prior from this study open up future research to explore deeper into why these variables may not be the same in all samples. Hyperactivity-impulsivity symptoms did not have any significant moderation effects.

Findings also give insight on the way behaviors that parents and teachers exhibit can affect the children in school. This sample was composed of kindergarteners, and this is a crucial time in development for parents to start building involvement behaviors. Even though the moderations were not significant, there were some cases where the presence of ADHD symptoms did impact both trust and PI negatively. Educating parents on why trust and involvement are important could help prevent the negative effects of ADHD symptoms, as well as teachers and schools being more communicative and welcoming to build trust with the parents.

Conclusions

The current study provides insights on areas to explore for continuing research into the relationships being analyzed. On top of supporting past literature that trust is often positively correlated with PI, ADHD symptoms did have differing effects on each type of PI. Exploring

why the specific subtypes of ADHD had differing effects on PI may prove essential for schools or parents looking to benefit the educational experience of those who may be struggling with symptoms at an early age.

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